

Opponent's review

Prague

Ph.D. dissertation thesis

February 10, 2016

Charles University in Prague, Faculty of Medicine in Hradec Kralove

Doctoral degree programme Internal Diseases

Title: Clinical use of neopterin, a laboratory biomarker of immune activation, in the assessment of prognosis, monitoring response to therapy and complications in cancer patients

Author: Sachin Vipinchandra Trivedi, M.D.

Supervisor: Prof. Bohuslav Melichar, Ph.D.

Text of the review:

The dissertation is organized transparently, divided into 12 chapters with 132 references. The thesis contains 97 pages of text, including 26 figures, 6 tables and the list of references.

The aim of this work is to use neopterin as a biomarker of immune response during anticancer treatment of oncological patients. The aim of the study is realistic, logical and matches the topic.

In a two-part study, serial urinary neopterin was measured in two different cohorts of patients who underwent anticancer therapy. In part one 45 patients with diagnosis of metastatic colorectal cancer, who were being treated with chemotherapy and cetuximab, were analyzed. In part two, samples from 10 patients with diagnosis of gynecological malignancy, mostly cervical cancer undergoing chemoradiotherapy, were analyzed.

In patients with metastatic colorectal carcinoma, higher neopterin levels were associated with poor prognosis. In patients with gynecological cancer, pretreatment neopterin levels were generally higher. No association of therapy-associated changes in neopterin levels were observed, however, it was able to demonstrate that the rises in neopterin were related with complications.

The statistical evaluation used modern methods and professional analysis, adequate content of work. Statistical evaluation of the results relate to the objectives of the work. Graphs are drawn accurately and are an important part of the results of the work.

The text is written in modern English with an exact scientific terminology, clearly arranged and fully meets the requirements of scientific work.

The quality of the presented dissertation testifies the publication in impacted journal (Melichar B, Kalábová H, Krčmová LK, Trivedi SV, et al. Urinary neopterin concentrations during combination therapy with cetuximab in previously treated patients with metastatic colorectal carcinoma. In Vivo 2014; 28 (5): 953-959, IF 0.974) that is related to the work, and whose co-author is the author of the dissertation.

Questions for candidate:

Where, in the current clinical oncological practice, is the examination of neopterin most useful ?

In which field of anticancer treatment should be neopterin studied in future trials ?

Conclusion: The dissertation met its objective. I recommend award to Dr. Sachin Vipinchandra the academic degree Ph.D.

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